

Amendment to the Claims

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1. (Original) A computer-based method for adding a participant to a network of participants, each participant being connected to three or more other participants, the method comprising:

identifying pair of participants of the network that are connected;  
disconnecting the participants of the identified pair from each other; and  
connecting each participant of the identified pair of participants to the added participant.

2. (Original) The method of claim 1 wherein each participant is connected to 4 participants.

3. (Original) The method of claim 1 wherein the identifying of a pair includes randomly selecting a pair of participants that are connected.

4. (Original) The method of claim 3 wherein the randomly selecting of a pair includes sending a message through the network on a randomly selected path.

5. (Original) The method of claim 4 wherein when a participant receives the message, the participant sends the message to a randomly selected participant to which it is connected.

6. (Original) The method of claim 4 wherein the randomly selected path is approximately proportional to the diameter of the network.

7. (Original) The method of claim 1 wherein the participant to be added requests a portal computer to initiate the identifying of the pair of participants.

8. (Original) The method of claim 7 wherein the initiating of the identifying of the pair of participants includes the portal computer sending a message to a connected participant requesting an edge connection.

9. (Original) The method of claim 8 wherein the portal computer indicates that the message is to travel a certain distance and wherein the participant that receives the message after the message has traveled that certain distance is one of the participants of the identified pair of participants.

10. (Original) The method of claim 9 wherein the certain distance is approximately twice the diameter of the network.

11. (Original) The method of claim 1 wherein the participants are connected via the Internet.

12. (Original) The method of claim 1 wherein the participants are connected via TCP/IP connections.

13. (Original) The method of claim 1 wherein the participants are computer processes.

14. (Original) A computer-based method for adding nodes to a graph that is m-regular and m-connected to maintain the graph as m-regular, where m is four or greater, the method comprising:

identifying p pairs of nodes of the graph that are connected, where p is one half of m;

disconnecting the nodes of each identified pair from each other; and

connecting each node of the identified pairs of nodes to the added node.

15. (Original) The method of claim 14 wherein identifying of the p pairs of nodes includes randomly selecting a pair of connected nodes.

16. (Original) The method of claim 14 wherein the nodes are computers and the connections are point-to-point communications connections.

17. (Original) The method of claim 14 wherein m is even.

18-31. (Cancelled)

32. (Original) A computer-readable medium containing instructions for controlling a computer system to connect a participant to a network of participants, each participant being connected to three or more other participants, the network representing a broadcast channel wherein each participant forwards broadcast messages that it receives to its neighbor participants, by a method comprising:

identifying a pair of participants of the network that are connected;  
disconnecting the participants of the identified pair from each other; and  
connecting each participant of the identified pair of participants to the added participant.

33. (Original) The computer-readable medium of claim 32 wherein each participant is connected to 4 participants.

34. (Original) The computer-readable medium of claim 32 wherein the identifying of a pair includes randomly selecting a pair of participants that are connected.

35. (Original) The computer-readable medium of claim 34 wherein the randomly selecting of a pair includes sending a message through the network on a randomly selected path.

36. (Original) The computer-readable medium of claim 35 wherein when a participant receives the message, the participant sends the message to a randomly selected participant to which it is connected.

37. (Original) The computer-readable medium of claim 35 wherein the randomly selected path is approximately twice a diameter of the network.

38. (Original) The computer-readable medium of claim 32 wherein the participant to be added requests a portal computer to initiate the identifying of the pair of participants.

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cont

39. (Original) The computer-readable medium of claim 38 wherein the initiating of the identifying of the pair of participants includes the portal computer sending a message to a connected participant requesting an edge connection.

40. (Original) The computer-readable medium of claim 38 wherein the portal computer indicates that the message is to travel a certain distance and wherein the participant that receives the message after the message has traveled that certain distance is one of the identified pair of participants.

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41-49. (Cancelled)